

## Performance of the Safety Edge

After one year in service the Safety Edge retains its shape in "like new" condition, while sections without the safety edge have raveled to a near vertical face.

### Initial Construction



Without Safety Edge



With Safety Edge



After One Year In-Service



## Benefits of the safety edge design include:

- Reduced Tort Liability
- Minimal Costs
- Increased Durability of the Pavement Edge
- Edge Dropoff Mitigation During Construction
- A Permanent Safety Feature if Dropoffs Re-Emerge

Based on the findings from the pilot project, the Safety Edge Design does not affect the smoothness of the finished pavement nor does it increase erosion of the soil shoulders.

**Based on the successful construction and performance of the safety edge after one year in-service, GDOT will implement the design on a statewide basis beginning in January 2005.**

## For More Information Please Contact

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U.S. Department of Transportation  
**Federal Highway Administration**

# THE SAFETY EDGE

The Georgia Department of Transportation Experience

## Pavement Edge Treatment

- Saves Lives
- Reduces Tort Liability
- Easily Constructible
- Costs Less than 1% Material Cost



## Pavement Dropoffs are a Serious Safety Problem

One major concern for driver safety is excessive vertical dropoff between the paved surface and the unpaved shoulder. One solution to this problem is to form a thirty-degree tapered transition at the edge of the paved surface called the "safety edge". The Georgia Department of Transportation (GDOT) completed a pilot project in 2003 that incorporated the safety edge design.



30-Degree Safety Edge

## How do Unsafe Edges Cause Crashes?

An errant vehicle that has departed the paved surface can experience difficulty reentering the travel way if the tires traverse a vertical edge of 3 inches or more. This tire to pavement interaction is known as "scrubbing". When a tire(s) scrubs the pavement edge, resulting forces of a vertical pavement edge act on that tire to prevent reentry. This may cause a sudden and

steep-angled reentry onto the travel way. This resulting steep-angle reentry can lead to over steering and head-on collisions.

## Safety Edge Hardware

Two different devices used to construct the safety edge were evaluated in a pilot project. One device, the GDOT Safety Wedge, was fabricated "in house" by the GDOT maintenance department. The hardware is a steel wedge that is mounted with a simple two-bolt connection onto the screed end gate. This device has a rounded leading edge that is crucial to providing a smooth finished compaction to the safety edge. The device is also capable of adjusting vertically to varying dropoff heights.



GDOT Safety Wedge

A proprietary device developed by TransTech Systems, Inc was also evaluated. The Safety Edge Maker™ (SEM) hardware has a mounting plate that easily attaches to the screed with a self-adjusting spring that allows the device to follow the roadside surface. The unit provides a compound angled surface that pre-compacts the

asphalt as it enters the device. As the asphalt continues under the 30-degree edge it is then smoothed, as it would be under the screed bottom, to create a better surface finish on the angled mat.



Trans Tech Safety Edge Maker™

Both the GDOT Safety Edge Hardware and the Safety Edge Maker hardware successfully produced a durable safety edge.

## Construction of the Safety Edge

The safety edge can be implemented on any type of roadway facility as an integrated part of the asphalt paving process. Implementation of the Safety Edge cost less than 1% of the hot-mix asphalt material cost.

No additional construction operation is needed to place the safety edge. A typical installation includes clipping the earth shoulder back, constructing the asphalt overlay, and pulling the shoulders flush with the paved shoulder.